

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-18 (canceled)

Claim 19. (new) A loop filter for a continuous time sigma delta analog to digital converter which converts an analog input signal into a digital output signal, the loop filter comprising:

an input having an input signal, the input signal at least in part representative of the digital output signal of the sigma delta analog to digital converter;

an active analog filter operably coupled to the input, the active analog filter including a first number of active devices for providing a power gain, the active analog filter being of an N th order, wherein N exceeds the first number of active devices.

Claim 20. (new) The loop filter according to claim 19,
wherein at least one of said active devices comprises an operational amplifier.

Claim 21. (new) The loop filter according to claim 19,
wherein at least one of said active devices comprises a transconductance amplifier.

Claim 22. (new) The loop filter according to claim 19,
wherein at least one of said active device comprises a voltage to current converter.

Claim 23. (new) The loop filter according to claim 19, wherein said active analog filter
comprises a plurality of series connected cascaded analog filter elements.

Claim 24. (new) The loop filter according to claim 23,
wherein said cascaded analog filter elements comprise cascaded biquad filter elements.

Claim 25. (new) The loop filter according to claim 24,
wherein said cascaded analog filter elements comprise cascaded lattice filter elements.

Claim 26. (new) The loop filter according to claim 24,
wherein at least one biquad filter element is a Sallen-and-Key filter element.

Claim 27. (new) The loop filter according to claim 19,
wherein the active analog filter includes at least one Sallen-and-Key filter element.

Claim 28. (new) The loop filter according to claim 19,
further comprising an output terminal operably connected to provide a loop filter output
signal to a quantizer which quantizes the loop filter output signal to generate said digital
output signal.

Claim 29. (new) The loop filter according to claim 28,
wherein the analog active filter comprises a third order filter and the first number of active devices is two.

Claim 30. (new) The loop filter according to claim 19,
wherein said loop filter comprises at least one digital-analog-converter (DAC) operable to receive the digital output signal and generate an analog signal based thereon.

Claim 31. (new) The loop filter according to claim 30,
wherein the input signal comprises the analog signal generated by the DAC added to the analog input signal.

Claim 32. (new) A sigma delta analog-digital-converter which converts an analog input signal to a digital output signal,
comprising:

a loop filter which comprises an active analog filter, the active analog filter that includes a first number of active devices providing a power gain, the first number of active devices lower than a filter order of said active analog filter; and

a quantizer which quantizes a loop filter output signal of said active loop filter to generate said digital output signal.

Claim 33. (new) The sigma delta analog-digital-converter according to claim 32, wherein said loop filter includes a first input terminal for applying said analog input signal.

Claim 34. (new) The sigma delta analog-digital-converter according to claim 33, wherein the loop filter further comprises a second input terminal configured to receive the digital output signal of said quantizer.

Claim 35. (new) The sigma delta analog-digital-converter according to claim 34, wherein said loop filter comprises at least one digital-analog-converter operably coupled to convert the digital output signal received at said second input terminal of said loop filter into an analog signal.

Claim 36. (new) The sigma delta analog-digital-converter according to claim 35, wherein the analog signal generated by said digital-analog-converter is added to the analog input signal applied to said first input terminal of said loop filter.

Claim 37. (new) The loop filter according to claim 32, wherein the active analog filter includes at least one biquad filter element.

Claim 38. (new) The loop filter according to claim 37, wherein said at least one biquad filter element is a Sallen-and-Key filter element.

II. Conclusion

Applicant respectfully requests entry of the amendment and favorable consideration of the application.

A prompt and favorable action on the merits is requested.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read 'H. C. Moore', followed by a horizontal line.

February 6, 2004

Harold C. Moore
Attorney for Applicant
Attorney Registration No. 37,892
Maginot, Moore & Beck
Bank One Center Tower
111 Monument Circle, Suite 3000
Indianapolis, IN 46204-5115
Telephone: (317) 638-2922